



PREDIX TECHNOLOGY BRIEF

Digital Twin

For Industrial Intelligence that analyzes the past, understands the present, and predicts the future

Asset-centric companies are seeking to move from a reactive to a proactive, digital approach to optimize and transform their business.

“Digital twin eliminates the guesswork when determining the best way to service critical physical assets—from engines to power turbines. Easy access to this unique combination of deep knowledge and intelligence about your assets paves the road to optimization and business transformation.”

Colin Parris, Vice President
GE Software Research

Predix Digital Twin Fast Facts

- A radical new approach to industrial asset and systems intelligence
- Represent a wide variety of complexity: From spark plugs to engines, to a power generation unit, to an entire power plant
- Multi-level data and intelligence across the life cycle of parts, assets, and systems: Design, Build, Run, Operate, and Service
- Asset and system knowledge, early warnings, predictions, learnings, and optimization

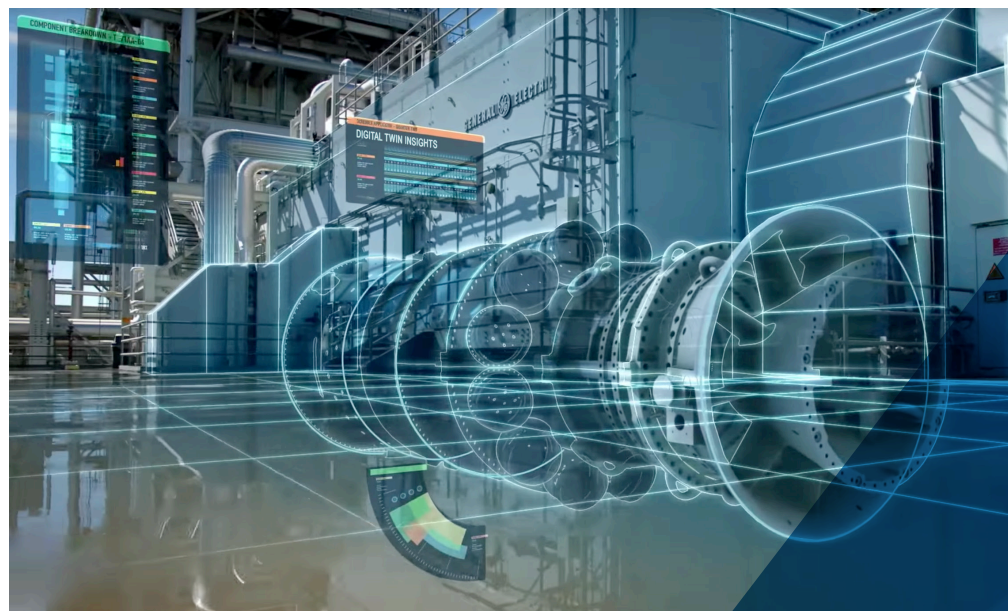
Industrial companies are realizing that to thrive they need to optimize their operations, improve lagging productivity, and develop innovative new business models.

Sensor capabilities, affordable data storage and computing, analytics, and ubiquitous network connectivity are creating opportunities for companies to connect their assets and collect their data. Progress in analytics, models, and machine learning is creating even more possibilities for better insights. And yet, many industrial companies underestimate the complexity of connecting the physical and digital worlds, operating without a platform, methodology, or approach.

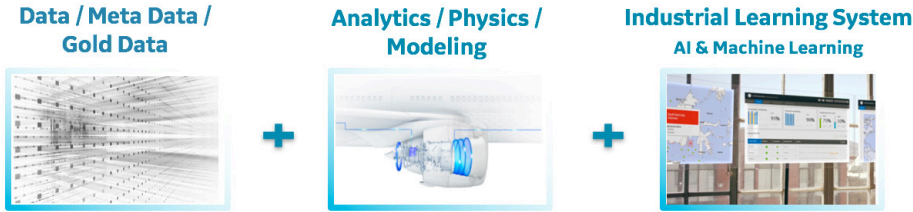
What’s needed is a new way to build apps optimized for understanding physical assets.

Digital twins build the bridge from the physical to the digital worlds, providing understanding of each unique asset over time. They combine the data from sensors and devices with analytics, models, and material science for a constantly improving digital model of industrial components and assets, and even entire processes and plants. As more digital twins run on the platform, the industrial learning system feeds back data to the individual digital twins, improving fidelity.

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Predix is the only platform and learning system optimized for digital twins



Predix is GE Digital's platform for the Industrial Internet. Predix empowers domain experts and developers to build and run digital twins using a set of sophisticated data and modeling techniques. These digital twins are used to create innovative outcome-based industrial applications.

Digital twins on the Predix platform provide a new approach to asset and system intelligence. Digital twins provide a rich, constantly evolving picture of machines and operations, capturing everything from components to functions to entire processes and plants. They capture the entire lifespan of an asset, as well as entire asset classes, and gain insights into past and present performance and future intelligence. Furthermore, digital twins are an ideal software object to perform simulations, allowing for scenario testing and further optimization.

Whether you are an asset manufacturer or asset operator, Predix-powered digital twins offer a unique, highly accurate digital representation of your assets and systems across their **design, build, run, operate and service** lifecycle, removing barriers to insight and innovation.

Think about the possibilities.

Roadmap to digital twin-enabled industrial apps

Build asset/system: Data scientists package asset data and intelligence, applying analytics, models, and machine learning. Predix provides standard toolkits to help accelerate the build process.

Run: The platform runs and persists digital twins for each asset/system.

Consume: Apps and developers access context data, APIs, and insights from the digital twin.

Get started by meeting our world-class team of asset and system experts and data science and machine learning professionals. Uncover relationships between your data and key business drivers, exploring new monetization opportunities:

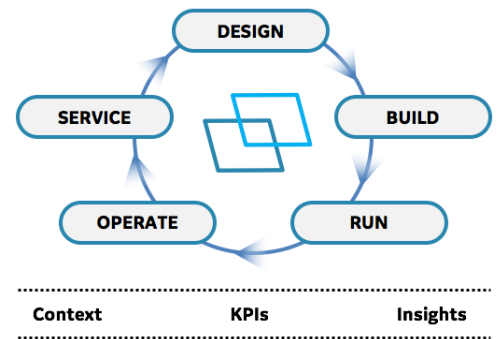
ge.com/digital/services/advisory-services

Outcomes that matter

Aviation

- A bearing anomaly detection for jet engines gives a 15-30 day heads-up on potential failures
- Lifing prediction for stage 1 blades leads to \$44M in savings in engine maintenance
- Dynamic optimization of maintenance schedules of jet engines + understanding of airline routes and maintenance shop availability = \$10M annual savings

Industrial Lifecycle of an Asset



Digital twins provide the analytical and predictive power to expose new business opportunities and better operational methods.

ge.com/digital/predix

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